IN THE CLAIMS

Please amend the claims as follows:

1.   (Previously Presented) A computerized method for recognizing music, the method comprising:

      receiving an input data representing a played note;

      performing time alignment on the input data;

      extracting features from the input data;

      weighting at least a subset of the features; and

      comparing according to the weighting the extracted features to a dataset of saved note features to determine a matching note;

      wherein a match occurs when at least a subset of the extracted features match a note in the dataset of save note features.

2.   (Original) The method of claim 1, wherein the input data is analog data and further comprising performing an analog to digital conversion of the input data.

3.   (Original) The method of claim 1, wherein performing time alignment include performing a FFT on the input data.

4.   (Original) The method of claim 3, wherein the FFT comprises a 512 point FFT.

5.   (Previously Presented) The method of claim 1, wherein the played note matches the saved note if at least four of note features for the played note match a set of six note features for the saved note.

6.   (Original) The method of claim 5, wherein the set of note features includes a fundamental frequency.

7.   (Original) The method of claim 5, wherein the set of note features includes note-duration.

8.   (Original) The method of claim 5, wherein the set of note features includes at least one harmonic frequency.

9.   (Original) The method of claim 8, wherein the set of note features includes at least 5 harmonic frequencies.

10.   (Original) The method of claim 5, wherein the set of note features includes at least one peak location and at least one peak value.

11.   (Original) The method of claim 10, wherein the comparing includes weighting the at least one peak location and the at least one peak value.

12.   (Original) The method of claim 1, wherein performing time alignment includes determining a start point and an end point of a note in the input data.

13.   (Original) The method of claim 12, wherein a sum of the square of the amplitude is used to determine the start point.

14.   (Original) The method of claim 12, wherein the sum of the absolute amplitude is used to determine the start point.

15.   (Currently Amended) A computerized method for providing a music tutor, the method comprising:

        training a system to recognize a set of notes played by a musical instrument ~~form~~ <u>from</u> one or more reference notes;

        retrieving a set of musical data comprising one or more reference notes;

        displaying at least a portion of the set of musical data, said portion including a current note from the one or more reference notes;

receiving a played note;

comparing the played note to the current note; and

displaying an indication of whether the played note matches the current note.

16.   (Original) The computerized method of claim 15, wherein displaying an indication changes the color of the reference note in accordance with whether the played note matched the reference note.

17.   (Canceled)

18.   (Original) The computerized method of claim 15, further comprising composing the set of reference notes.

19.   (Original) The computerized method of claim 15, wherein the reference notes are included on a flash card.

20.   (Original) The computerized method of claim 15, wherein the reference notes are included on a musical segment.

21.   (Original) The computerized method of claim 15 wherein displaying an indication of whether the played note matches the current note includes highlighting correctly played notes in a first highlight and highlighting incorrectly played notes in a second highlight.

22.   (Original) The computerized method of claim 21, wherein the first highlight is a first color and the second highlight is a second color.

23.   (Original) The computerized method of claim 21, wherein the first highlight is a first cross-hatching and the second highlight is a second cross-hatching.

24.   (Previously Presented) A computerized system comprising:

a processor and a memory coupled to the processor;

an analog to digital (A/D) converter coupled to the processor;

a sound input device coupled to the A/D converter;

a database; and

a display;

wherein the analog to digital converter is operable to receive sound input from the sound input device and wherein the processor is operable to:

receive a set of data from the A/D converter, said data representing at least one note,

extract note features from the set of data,

applying a weighting to at least a subset of the note features, and

identify the note based on matching the data representing at least one note to the set of database data, said identification occurring in near real-time, wherein a match occurs when at least a subset of the extracted features match a note in the dataset of saved note features.

25.   (Original) The system of claim 24, wherein the A/D converter is included in a sound card.

26.   (Original) The system of claim 24, wherein the sound input device is a microphone.

27.   (Original) The system of claim 24, wherein the sound input device is a MIDI compatible device.

28.   (Original) The system of claim 24, wherein the display is an LCD (Liquid Crystal Display).

29.   (Original) The system of claim 24, wherein the processor is further operable to output a musical segment comprising at least one note to the display.

30.   (Original) The system of claim 24, wherein the processor, the memory, the A/D converter and the display are incorporated on a single board computer.

31.   (Original) The system of claim 24, wherein the processor, the memory, the A/D converter and the display are incorporated in a personal computer.

32.   (Previously Presented) A computer-readable medium having computer-executable instructions for performing a method for recognizing music, the method comprising:

   receiving an input data representing a played note;

   performing time alignment on the input data;

   extracting features from the input data;

   weighting at least a subset of the features; and

   comparing according to the weighting the extracted features to a dataset of saved note features to determine a matching note;

   wherein a match occurs when at least a subset of the extracted features match a note in the dataset of saved note features.

33.   (Original) The computer-readable medium of claim 32, wherein the input data is analog data and wherein the method further comprises performing an analog to digital conversion of the input data.

34.   (Original) The computer-readable medium of claim 32, wherein performing time alignment include performing a FFT on the input data.

35.   (Original) The computer-readable medium of claim 34, wherein the FFT comprises a 512 point FFT.

36.   (Previously Presented) The computer-readable medium of claim 32, wherein the played note matches the saved note if at least four of note features for the played note match a set of six note features for the saved note.

37.   (Original) The computer-readable medium of claim 36, wherein the set of note features includes a fundamental frequency.

38.   (Original) The computer-readable medium of claim 36, wherein the set of note features includes note-duration.

39.   (Original) The computer-readable medium of claim 36, wherein the set of note features includes at least one harmonic frequency.

40.   (Original) The computer-readable medium of claim 39, wherein the set of note features includes at least 5 harmonic frequencies.

41.   (Original) The computer-readable medium of claim 36, wherein the set of note features includes at least one peak location and at least one peak value.

42.   (Original) The computer-readable medium of claim 41, wherein the comparing includes weighting the at least one peak location and the at least one peak value.

43.   (Original) The computer-readable medium of claim 32, wherein performing time alignment includes determining a start point and an end point of a note in the input data.

44.   (Original) The computer-readable medium of claim 43, wherein a sum of the square of the amplitude is used to determine the start point.

45.   (Original) The computer-readable medium of claim 43, wherein the sum of the absolute amplitude is used to determine the start point.

46.   (Previously Presented) A computer-readable medium having computer-executable instructions for performing a method for providing a music tutor, the method comprising:

        training a system to recognize a set of notes played by a musical instrument to create one or more reference notes;

        retrieving a set of musical data comprising one or more reference notes;

        displaying at least a portion of the set of musical data, said portion including a current note from the one or more reference notes;

        receiving a played note;

        comparing the played note to the current note; and

        displaying an indication of whether the played note matches the current note.

47.   (Original) The computer-readable medium of claim 46, wherein displaying an indication changes the color of the reference note in accordance with whether the played note matched the reference note.

48.   (Canceled)

49.   (Original) The computer-readable medium of claim 46, further comprising composing the set of reference notes.

50.   (Original) The computer-readable medium of claim 46, wherein the reference notes are included on a flash card.

51.   (Original) The computer-readable medium of claim 46, wherein the reference notes are included on a musical segment.

52.   (Original) The computer-readable medium of claim 46 wherein displaying an indication of whether the played note matches the current note includes highlighting correctly played notes in a first highlight and highlighting incorrectly played notes in a second highlight.

53.   (Original) The computer-readable medium of claim 52, wherein the first highlight is a first color and the second highlight is a second color.

54.   (Original) The computer-readable medium of claim 52, wherein the first highlight is a first cross-hatching and the second highlight is a second cross-hatching.

55.   (Previously Presented) A computerized system comprising:

a database having a set of data representing at least one database note;

a sound input interface;

a pattern matching module coupled to the database and the sound input interface and operable to compare a set of data representing at least one played note with the set of data representing the at least one musical note and to identify the played note, the identification comprising applying a weighting to at least a subset of a set of note features in the set of data and performing a comparison of the weighted set of note features of the at least one played note to the set of data representing the at least one musical note;

a compose segment module operable to receive the identified played note and to output the played note.

56.   (Original) The computerized system of claim 55, wherein the compose segment module outputs the played note to a display.

57.   (Original) The computerized system of claim 55, wherein the compose segment modules is operable to output the played note to a music file.

58.   (Original) The computerized system of claim 57 wherein the music file is a flash card file.

59.   (Original) The computerized system of claim 55, further comprising a playback module operable to read a music file and to display a set notes in the music file.

AMENDMENT AND RESPONSE UNDER 37 CFR § 1.111
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60.   (Original) The computerized system of claim 59, wherein the set of notes are displayed as a flash card.

61.   (Original) The computerized system of claim 59, wherein the playback module receives data representing at least one played note from the pattern matching module and compares the at least one played note to the set of notes in the flash card file.

62.   (Original) The computerized system of claim 61, wherein the playback module identifies whether the at least one played note was played correctly.

63. (Original) The computerized system of claim 61, wherein the playback module maintains statistics on a number of correctly played notes.